

## Section 9: Natural Gas Policy Issues and Recommendations

Natural gas markets in the United States and the Northwest have been changing, as described in this report. Growing demand for natural gas along with constrained supplies suggest that future natural gas prices will be higher and more volatile. This situation requires a reexamination of natural gas energy policy nationally and in the Pacific Northwest. In the first portion of this section we summarize natural gas policy proposals and discussion at a national level. In the second portion we outline issues, and options for consideration at the state level. Our intent is to begin to develop a framework for discussion that ultimately will result in a more complete natural gas energy policy in Washington.

### *National Policy Issues Framed in Recent Reports*

The conditions that spurred the growth in gas consumption during the 1990s and encouraged the high growth forecasts for the 2000-2020 period, the apparent abundance of natural gas and low prices, appear to have changed dramatically over the last several years. The recent gas market forecasts paint a significantly different picture of the future; one where supply and demand remain in tight balance and prices are significantly higher than historical norms.

In this context U.S. policy makers are now considering a variety of long-term supply and demand strategies to address concerns about high gas prices and price volatility. The most detailed recent national policy review was performed by the National Petroleum Council and is summarized below. Many of these recommendations are controversial and while CTED does not necessarily endorse all of these proposals, we believe it is important for readers to understand the natural gas policy proposals that are being discussed at the national level.

*Increasing Efficiency and Demand Flexibility:* Efficiency and conservation by natural gas consumers provides one of the best near-term options for reducing natural gas demand and price volatility.

1. Public education: Enhance public education programs for energy conservation, efficiency and weatherization. Identify best practices and encourage adoption of these practices nationwide.
2. Review and upgrade efficiency standards: Review and compare efficiency standards for buildings and appliances. Upgrade in a timely and cost-effective manner.
3. Provide clearer market price signals to consumers to facilitate efficient gas use.
4. Provide industrial cogeneration facilities with access to markets.
5. Increase industrial and power generation capability to utilize alternate fuels. Remove discrimination against alternative fuels that can meet performance standards.
6. Provide certainty of air quality regulations, especially under New Source Review, to create a clear investment setting for industrial consumers and power generators.
7. Consider the costs and benefits of fuel switching capability when developing integrated resource plans (IRPs).

*Increasing Supply Diversity:* Traditional North American gas resources appear unable to meet long-term demand growth expectations. New sources of natural gas, such as Arctic gas and LNG, will be needed to help close the supply gap and meet anticipated growing demand.

1. Enact enabling legislation for an Alaska pipeline in 2004. Passage of this legislation would provide project certainty and ensure deliveries begin in 2013-14. The legislation should incorporate adequate risk mitigation for developers, while minimizing potential cost exposure for taxpayers.
2. LNG development should be actively encouraged. Permitting activities for the development of LNG offloading terminals should be streamlined and timely; regulatory authority should be clarified. LNG safety should be reviewed and updated if necessary; public education on LNG should be enhanced.
3. Increase access and reduce permitting impediments to development of Lower 48 resource development. An increasing fraction of our future natural gas resource will be located on federal lands that are excluded from development or have highly restricted access.

*Sustaining and Enhancing the Natural Gas Infrastructure:* Additional infrastructure will be required to meet the future needs of the natural gas market.

1. Federal and state regulators should provide regulatory certainty by maintaining a consistent cost recovery and contracting environment.
2. Complete permit review of major infrastructure projects within one year. A joint agency review process should be developed
3. Barriers to establishing long-term contracts for customers should be examined.
4. FERC and public utility commissions should keep pace of changing infrastructure needs created by the new gas suppliers from the Arctic and LNG.
5. Regulators should evaluate and encourage research into more efficient and less expensive infrastructure options.

*Promoting Efficiency in the Natural Gas Markets:* North American natural gas markets are relatively efficient, but could be improved.

1. The EIA should improve the monthly and annual natural gas data collection and reporting process.
2. The EIA's weekly storage data collection reporting should be expanded so it more adequately reflects actual gas storage volumes.
3. EIA should reduce the time lag in their reported data series by one month.
4. Voluntarily reporting services for natural gas transactions should be examined to guarantee accuracy and prevent manipulation.
5. The natural gas resource assessment methodologies used by various government agencies and businesses should be periodically examined and updated. Modeling information and data should be made more publicly available.

## *State Policy Issues, Opportunities and Questions*

The State of Washington's long-term policy goal is to ensure a reliable supply of natural gas for consumers, at reasonable prices, with minimal price volatility, and with acceptable environmental consequences. This section outlines policy opportunities for reducing natural gas prices and price volatility in Washington State. These opportunities cover: 1. Supply diversity, 2. Demand reduction, 3. Infrastructure improvements, 4. Measures to reduce price volatility. The issues and opportunities presented here provide an initial framework for further development of a natural gas energy policy in Washington.

*Supply Diversity:* Diversifying the source of natural gas on the West Coast is one approach for mitigating the problems with natural gas supply. Two new gas resources that offer good opportunities are presented below.

1. *Arctic Natural Gas:* Resources in Northern Canada and Alaska have the potential to contribute over 6 Bcf per day to North American supply at a sizable net economic benefit to the nation.<sup>1</sup> Development of the Arctic resources would provide more natural gas to regional gas trading hubs thus potentially helping regional consumers. In addition, the development of these resources could provide a sizable regional benefit during the construction of the pipeline.
2. *Liquefied Natural Gas (LNG):* The price for LNG delivery has fallen dramatically over the last 20 years. Activating and upgrading the four existing LNG receiving terminals and adding four new receiving terminals over the next decade would provide approximately 6 Bcf per day of additional supply.

Development of LNG delivery facilities in Southern California and Baja Mexico should reduce competition for the limited natural gas resources coming from Western Canada and the Rocky Mountain basins. Over the longer-term, Canadian gas imports will decline making it likely that Washington State will have to consider development of a local LNG delivery facility. Stakeholder support for development of a regional LNG facility should be evaluated in the near future.

*Demand Reduction:* Slowing demand growth can help mitigate high gas prices and volatility. We have identified three broad areas for reducing natural gas demand.

1. *Conservation and energy efficiency:* Increasing the energy efficiency of natural gas consumption is an effective way to both reduce demand for natural gas and the costs for natural gas supply and capacity development. The Northwest has a long history of using electricity efficiency improvements to reduce electricity system resource development costs.<sup>2</sup> While there have been investments in natural gas

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<sup>1</sup> An economic analysis by the National Commission on Energy Policy (October 2003) stated that accessing Alaska natural gas would provide net benefits of 4.5 billion dollars per year to gas consumers. The net benefits would be higher if the avoided losses of industrial jobs due to high gas prices were included.

<sup>2</sup> The Northwest Power and Conservation Council reports regional energy savings since 1980 totaling more

energy efficiency, a level of effort comparable to electricity has not occurred. We offer the following options for natural gas energy efficiency efforts.

- *Increase and maintain investments in natural gas energy efficiency and demand response programs.* Raising tariff riders and program targets to reflect higher natural gas costs and constrained supplies could be considered.

Natural gas utilities in Washington are increasing their investments in energy efficiency, descriptions of which can be found in Appendix D.

- *Maintain and strengthen electricity energy efficiency programs to reduce load growth.* Electricity energy efficiency programs have successfully reduced the demand for electricity generation. In the absence of these programs, much of the new generation capacity would likely have been provided by natural gas-fired power plants, which would have significantly increased regional natural gas demand.
- *Develop public awareness, information and education campaigns on energy efficiency and conservation.* Public awareness campaigns reduce consumption when people perceive a clear need and individuals have the ability to take action. Water conservation and recycling efforts are good examples of the potential effectiveness of public awareness campaigns. The experience in California during the 2001 West Coast Energy Crisis illustrates that a broad energy efficiency and conservation campaign can produce significant energy reductions.
- *Strengthen federal, regional and state cooperation.* Markets stretch across local and state boundaries. In order to change markets so that energy efficient products, services and practices become more common, federal, regional, and state collaboration is necessary. This is often referred to as market transformation. At the federal level, the Energy Star and Rebuild America Programs are examples of initiatives that could be vehicles for expanded federal, regional, state, and local collaboration for improving natural gas energy efficiency.
- *Provide public sector leadership at the state (and local) level.* Public institutions can lead the way in reducing natural gas consumption. In January 2001, during the West Coast Energy Crisis, Gov. Gary Locke issued an executive order asking all state and local government agencies to take all measures necessary to reduce electricity and natural gas energy use by 10 percent.<sup>3</sup> These mechanisms could be reviewed to see if they are being used and followed, and modified if appropriate. Consideration should be given to expanding these opportunities to other public institutions.

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than 2,600 average megawatts from Bonneville Power Administration/utility programs, state energy codes and federal efficiency standards.

<sup>3</sup> The executive order included suggestions for reducing energy use. State executive agencies showed a reduction in electricity use of 8.9 percent for the quarter ending in September 2003 relative to the 2000 base period, but natural gas consumption increased 2.7 percent over the same time period.

- *Improve and maintain appliance efficiency standards and building codes.* Appliance efficiency standards and building codes have been two of the most effective methods for widespread improvements in energy efficiency. For appliance efficiency relative to natural gas, Washington State could encourage DOE to accelerate its standards rulemakings for residential heating equipment and commercial air conditioning equipment.

State energy codes for buildings in Washington have steadily improved over the years. Future efforts to improve building energy codes should account for improvements in building technologies and techniques as well as higher natural gas costs. These changes make higher levels of energy efficiency cost effective.

- *Encourage integrated natural gas resource least cost planning and consider combined electricity/gas planning.* The Washington Utilities and Transportation Commission requires least cost planning for all utilities. These plans are required to incorporate an assessment of technically feasible improvements in the efficient use of natural gas.<sup>4</sup> Puget Sound Energy recently used a least cost planning process to identify the targets for its natural gas energy efficiency efforts. However, least cost planning has not been widely applied by utilities to identify cost-effective natural gas energy efficiency opportunities. Use of this planning process should be encouraged to promote cost-effective natural gas efficiency efforts.

On a regional level, the Northwest Power and Conservation Council uses least cost planning principles to develop its five-year electric power plans for the region. No comparable regional planning process exists for natural gas. There may be value in having a broader regional effort that more fully considers gas system supply and capacity issues on a regional level.

- *Establish energy efficiency performance standards or public benefits funding.* A number of states have established efficiency performance standards or public benefits funding programs for their electric utilities. Under these laws, electric utilities are required to increase the efficiency of their generation and/or the way their customers use electricity. They usually do this by funding programs that encourage more efficient end use of electricity. We should explore whether there would be any benefit in requiring natural gas utilities to do the same things.

## 2. *Development of renewable energy*

Renewable energy resources such as wind turbines can cost-effectively displace the need for additional gas-fired electrical generation and thereby take pressure off gas prices. Recent reviews by the Union of Concerned Scientists (UCS, 2003a,b) and the American Council for an Energy-Efficient Economy (ACEEE,

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<sup>4</sup> The commission is considering proposed rules related to least cost planning. The review will consider whether the rules provide the results they were originally intended to achieve and whether they are consistent with agency policies and advances in technology.

2003) have evaluated the impact that development of renewable energy resources could have on natural gas demand.

Another advantage of renewable energy programs is that they can be developed in the near term (two to three years) and brought to the market faster than Arctic gas resources or LNG facilities. The Pacific Northwest should use the ACEEE analysis as a starting point and examine the costs and benefits of programs that promote efficiency and renewable energy sources.

Some policies to consider for promoting the development of renewable energy resources include:

- Establishing a Renewable Portfolio Standard;
  - Inclusion of environmental externality valuation in the IRP process;
  - Using futures natural gas prices in addition to EIA price forecasts during utility IRP development;<sup>5</sup>
  - Setting government purchase goals for renewable energy.
3. *Combined heat and power resources:* Combined heat and power (CHP) facilities typically operate at higher overall thermal efficiency levels, producing both electricity and process heat from a single heat source. Their higher thermal efficiency means that CHP can lead to reduced natural gas demand. CHP facilities are located where the process heat (often steam) and the electricity are used.

A number of policy and regulatory efforts could be considered to promote additional development of CHP in the Pacific Northwest. These include:

- Fair and reasonable interconnection standards for CHP;
- Industry and utility joint partnering in CHP projects;
- Consideration of CHP's environmental benefits in the utility IRP process;
- Environmental credit to CHP (due to its greater thermal efficiency, etc.);
- Production Tax Credit for net environmental benefits and fuel savings from CHP projects.

*Natural Gas Infrastructure Improvements:* The policy pathway for natural gas infrastructure improvements is not as clearly defined as it is for supply and demand policy options. Therefore we are presenting the section on natural gas infrastructure improvements as a series of questions to raise issues we believe are important.

1. Should the state support a greater level of instate natural gas storage capacity and use it as a more cost-effective means than additional pipelines to ensure supply reliability and manage price volatility?

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<sup>5</sup> The EIA has consistently underestimated gas prices during 1999-2003, which may lead to an underestimation of the true costs for gas-fired electricity generation.

2. Are there any concerns about the open season process? Is it working? Does it provide a strong enough signal to pipeline companies about how to develop? Are open seasons held frequently enough? Are they fair?
3. The energy sector may not be able to acquire all the financing it needs for critical infrastructure investments. Are there ways the state can help improve access to capital for the energy sector?
4. Should the government authorize construction of enough infrastructure to ensure there is never a supply shortfall or are consumers willing to accept a minimal level of risk of shortfalls to avoid higher costs?
5. Does the government (federal/state/local) permitting process operate effectively to ensure needed facilities can receive permits in a timely manner?

*Management Actions to Reduce Price Volatility:* We have identified three options that energy regulators and industries might pursue to reduce natural gas price volatility.

1. Market Information

Efforts should be undertaken at the regional level to expand and enhance availability and resources for natural gas market information. Energy markets can be distorted by late or inaccurate storage, supply or production information.<sup>6</sup> Timeliness and accuracy of reported sales by marketers, and production information from energy businesses should also be enhanced.

2. Portfolio Management: Financial and physical hedging

The current deregulated electricity and natural gas markets exhibit substantially more volatility than their regulated predecessors and therefore open local distribution companies, marketers, and eventually consumers, to substantial financial risk. To reduce the financial risk LDCs and others practice portfolio management (PM), which is a technique for diversifying an organization's resource mix. See Appendix E for a brief description of some PM techniques. LDCs should be encouraged to learn more about the evolving PM strategies of financial and physical hedging strategies that are used to mitigate price volatility.<sup>7</sup> Regulators should encourage LDCs to use PM, and possibly establish reward criteria for those that are well managed and beat gas market indices.

3. Natural Gas Cost Recovery

The four regulated natural gas utilities in Washington State recover their costs for purchasing natural gas for their customers through an annual Purchased Gas Adjustment (PGA) filing with the Washington Utilities and Transportation Commission. The PGA is intended to pass actual utility costs for acquiring natural gas to customers. The recent high and volatile wholesale prices have been largely passed on by the PGAs, to consumers resulting in very significant

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<sup>6</sup> Nationally, the EIA has already taken steps to improve the quality and timeliness of the monthly storage and other natural gas information.

<sup>7</sup> Hedging techniques reduce risk, but at a cost premium if managed by third parties.

rate increases. It may be appropriate to revisit whether the PGA is an effective cost recovery mechanism and whether other options may better serve consumer and utility industry needs.

Some issues to consider include:

- Current natural gas market price risks and the extent Washington consumers are exposed to those risks;
- The ability of utilities to enter into financial arrangements and other risk mitigation strategies;
- The ability to provide consumers with stable, predictable natural gas prices;
- The ability to ensure that natural gas prices are reasonable and equitable for consumers.
- The ability to promote market efficiency by encouraging the use of tools and approaches that limit market volatility and allow the market to function effectively.

This is a complicated topic that needs to involve a variety of parties and further detailed analysis. This could be one of the most significant policy actions Washington can take to limit the exposure of Washington consumers to natural gas market risks.

### ***Next Steps***

The policy options we have explored above need to be further investigated in a public context. Other important and relevant options might have been missed in our review, and could be added to the items above. The CTED Energy Policy Division has recently joined with the state energy offices from western U.S. states and western Canadian provinces in an effort, directed by the Western Interstate Energy Board, to further evaluate long-term natural gas supply and demand. The Energy Policy Division will also begin a collaborative discussion with the energy industry, policy analysts, consumer advocates and other interested parties within Washington State. The results of the process will be a set of recommendations for the Washington State Natural Gas Energy Policy